

WHAT IS CLAIMED IS:

1. A method for controlling a consumer electronic device, comprising:  
accessing metadata related to unique control behaviors of the consumer electronic device;  
associating a universal command for controlling consumer electronic devices with one or more command codes selected from a predefined set of command codes for the consumer electronic device, wherein said one or more command codes are selected based on said metadata;  
executing said universal command, wherein executing said universal command comprises transmitting said one or more command codes to the consumer electronic device.
2. The method of claim 1, wherein said executing said universal command comprises executing said universal command in response to user input.
3. The method of claim 1, wherein said executing said universal command comprises executing said universal command in response to reaching a predetermined time.
4. The method of claim 1, wherein said executing said universal command comprises executing said universal command in response to a predetermined event or action.
5. The method of claim 1, wherein said accessing metadata comprises wirelessly accessing a database that stores said metadata.
6. The method of claim 5, wherein said wirelessly accessing a database comprises establishing a wireless connection with a local area network.

7. The method of claim 5, wherein said wirelessly accessing a database comprises establishing a wireless connection with a wide area network.
8. The method of claim 5, wherein said wirelessly accessing a database comprises performing wireless communication in accordance with an IEEE 802.11 protocol.
9. The method of claim 5, further comprising:  
transmitting user input related to one or more errors in said metadata to a host that maintains said database via a database user interface.
10. The method of claim 5, further comprising:  
transmitting user input related to approval or disapproval of said metadata to a host that maintains said database via a database user interface.
11. The method of claim 1, further comprising:  
accessing said predefined set of command codes for the consumer electronic device.
12. The method of claim 11, wherein said accessing said predefined set of command codes comprises wirelessly accessing a database that stores said predefined set of command codes.
13. The method of claim 12, further comprising:  
transmitting user input related to one or more errors in said predefined set of command codes to a host that maintains said database via a database user interface.
14. The method of claim 12, further comprising:

transmitting user input related to approval or disapproval of said predefined set of command codes to a host that maintains said database via a database user interface.

15. An apparatus for controlling a consumer electronic device, comprising:  
a network interface;  
a transmitter;  
a user interface; and  
control logic coupled to said network interface, said IR transmitter, and said user interface;

wherein said control logic is adapted to access metadata related to unique control behaviors of the consumer electronic device via said network interface, to associate a universal command for controlling consumer electronic devices with one or more command codes selected from a predefined set of command codes for the consumer electronic device, wherein said one or more command codes are selected based on said metadata, and to execute said universal command in response to user input received via said user interface, wherein executing said universal command comprises transmitting said one or more command codes to the consumer electronic device via said transmitter.

16. The apparatus of claim 15, wherein said transmitter comprises an infrared (IR) transmitter.

17. The apparatus of claim 15, wherein said transmitter comprises a transmitter adapted for wireless communication in accordance with an IEEE 802.11 protocol

18. The apparatus of claim 15, wherein said network interface device comprises a wireless transceiver.

19. The apparatus of claim 18, wherein said wireless transceiver comprises a wireless transceiver adapted for wireless communication in accordance with an IEEE 802.11 protocol.

20. The apparatus of claim 15, further comprising:  
a memory;  
wherein said memory stores said universal command, said metadata, and said predefined set of command codes.

21. The apparatus of claim 15, wherein said control logic is adapted to access a database that stores said metadata via said network interface.

22. The apparatus of claim 21, wherein said user interface comprises:  
a database user interface adapted to receive user input related to one or more errors in said metadata;  
wherein said control logic is further adapted to transmit said user input to a host that maintains said database via said network interface.

23. The apparatus of claim 21, wherein said user interface comprises:  
a database user interface adapted to receive user input related to approval or disapproval of said metadata;  
wherein said control logic is further adapted to transmit said user input to a host that maintains said database via said network interface.

24. The apparatus of claim 15, wherein said control logic is further adapted to access said predefined set of command codes via said network interface.

25. The apparatus of claim 24, wherein said control logic is adapted to access a database that stores said predefined set of command codes via said network interface.

26. The apparatus of claim 25, wherein said user interface comprises:  
a database user interface adapted to receive user input related to one or more errors in said predefined set of command codes;  
wherein said control logic is further adapted to transmit said user input to a host that maintains said database via said network interface.
27. The apparatus of claim 25, wherein said user interface comprises:  
a database user interface adapted to receive user input related to approval or disapproval of said predefined set of command codes;  
wherein said control logic is further adapted to transmit said user input to a host that maintains said database via said network interface.
28. A system, comprising:  
a consumer electronic device;  
a server, said server including a database that stores a predefined set of command codes for said consumer electronic device and metadata related to unique control behaviors of said consumer electronic device; and  
a remote control unit communicatively connected to said consumer electronic device and to said server via a network;  
wherein said remote control unit is adapted to receive said predefined set of command codes and said metadata from said server, to associate a universal command for controlling consumer electronic devices with one or more command codes selected from said predefined set of command codes for said consumer electronic device, wherein said one or more command codes are selected based on said metadata, and to execute said universal command in response to user input, wherein executing said universal command comprises transmitting said one or more command codes to said consumer electronic device.

29. The system of claim 28, wherein said remote control unit is communicatively connected to said consumer electronic device via an infrared (IR) link.

30. The system of claim 28, wherein said remote control unit is communicatively connected to said consumer electronic device via an IEEE 802.11 link.

31. The system of claim 28, wherein said consumer electronic device comprises one of a television, a video cassette recorder, a digital video disc player, a personal video recorder, a compact disc player, a stereo receiver, an electronic thermostat, a lamp, or a video camera.

32. The system of claim 28, wherein said remote control unit comprises one of a personal digital assistant or a web-pad.

33. The system of claim 28, wherein said remote control unit is further adapted to establish a wireless connection with said network.

34. The system of claim 33, wherein said remote control unit is adapted to establish a wireless connection with said network in accordance with an IEEE 802.11 protocol.

35. The system of claim 28, wherein said network comprises a local area network.

36. The system of claim 28, wherein said network comprises a wide area network.

37. The system of claim 28, wherein said remote control unit is further adapted to receive user input related to one or more errors in said metadata and to transmit said user input to said server.

38. The system of claim 28, wherein said remote control unit is further adapted to receive user input related to approval or disapproval of said metadata and to transmit said user input to said server.

39. The system of claim 28, wherein said remote control unit is further adapted to receive user input related to one or more errors in said predefined set of command codes and to transmit said user input to said server.

40. The system of claim 28, wherein said remote control unit is further adapted to receive user input related to approval or disapproval of said predefined set of command codes and to transmit said user input to said server.

41. A system, comprising:

- a consumer electronic device; and

- a remote control unit communicatively coupled to said consumer electronic device, said remote control unit including a database that stores a predefined set of command codes for said consumer electronic device and metadata related to unique control behaviors of said consumer electronic device;

- wherein said remote control unit is adapted to receive said predefined set of command codes and said metadata from said database, to associate a universal command for controlling consumer electronic devices with one or more command codes selected from said predefined set of command codes for said consumer electronic device, wherein said one or more command codes are selected based on said metadata, and to execute said universal command in response to user input, wherein executing said universal command comprises

transmitting said one or more command codes to said consumer electronic device.

42. The system of claim 41, wherein said remote control unit is communicatively connected to said consumer electronic device via an infrared (IR) link.

43. The system of claim 41, wherein said remote control unit is communicatively connected to said consumer electronic device via an IEEE 802.11 link.

44. The system of claim 41, wherein said consumer electronic device comprises one of a television, a video cassette recorder, a digital video disc player, a personal video recorder, a compact disc player, a stereo receiver, an electronic thermostat, a lamp, or a video camera.

45. The system of claim 41, wherein said remote control unit comprises one of a personal digital assistant or a web-pad.

46. A database for facilitating control of a consumer electronic device, the database comprising:  
a predefined set of command codes for the consumer electronic device;  
and  
metadata related to unique control behaviors of the consumer electronic device.

47. The database of claim 46, wherein said predefined set of command codes for the consumer electronic device comprises a predefined set of infrared (IR) command codes.



48. The database of claim 46, wherein said metadata comprises data relating to selecting an input state of the consumer electronic device.

49. The database of claim 46, wherein said metadata comprises data relating to channel tuning of the consumer electronic device.

50. The database of claim 46, further comprising:  
one or more additional predefined sets of command codes for the consumer electronic device.

51. The database of claim 46, further comprising:  
one or more additional metadata related to unique control behaviors of the consumer electronic device